STORM SURGE:

A Report of the Assessment Performed by the NOAA Storm Surge Leadership Team in 2005

Executive Summary

NOAA Coastal Services Center
LINKING PEOPLE, INFORMATION, AND TECHNOLOGY

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After Hurricane Isabel in 2003, which caused widespread flooding and damage, the National Oceanic and Atmospheric Administration (NOAA) launched an internal review to determine the capabilities of its programs and the possibilities for improvement in certain areas. A major finding of the 2004 review was that NOAA needed to enhance the communication of storm surge information with both internal and external users. As a result, the NOAA Storm Surge Leadership Team was formed, consisting of representatives from various NOAA line offices, matrix programs, and other agencies and organizations. This team identified issues, opportunities, and challenges, and developed a storm surge forecast plan for NOAA to implement.

Specifically, the Storm Surge Team's objectives for the six-month study were to create a list of the types of users who apply storm surge information (to better assess their needs), identify storm surge research and development (R&D) activities conducted by external agencies, evaluate and improve current forecast products and decision-support tools, and formulate a plan for NOAA's implementation of these findings.
The Storm Surge Team created three working groups intended to design and execute these strategies:

- **Needs Assessment** – This group developed and completed a user needs assessment to capture preferences and knowledge of a wide variety of storm surge information users' needs and requirements. They conducted interviews, sent the assessment to 552 users (garnering 254 confidential responses), and designed and coordinated three regional focus groups.
- **Modeling Assessment –** The Modeling R&D group reviewed NOAA's existing storm surge models and developed new short-and long-term community approaches. They participated in the regional needs assessment and focus groups, conducted informal questionnaires to 45 modelers in the community (30 responded), and facilitated two modeling workshops.
- **Forecast Products and Service Assessment** – The Forecast and Decision Support Tool Development group assisted in implementing a strategy NOAA could use to better communicate storm surge forecasts and information. They collaborated with the Model R&D group on workshops, focus groups, modeling questionnaires, and workshops to implement future strategies. They combined and analyzed the complete set of user needs and modeling assessments.

Findings and Recommendations

The three groups identified that storm surge information users required more knowledge about models and decision-support tools, and noted that these users were extremely confused by the many ways NOAA was communicating water-level forecasts in its products.

Using these findings, the Storm Surge Team suggests NOAA take short-, middle-, and long-term actions to advance its storm surge activities. Recommendations include developing a common set of definitions to educate users, a community-modeling approach to create the next generation of storm surge forecasting and modeling, and a standard set of tools. In addition, NOAA is advised to establish a biennial coastal modeling conference, a test bed program, an extended storm surge forecast, and a catalog of educational user tools, training, and outreach materials. Finally, NOAA should better coordinate with other agencies to update statistics, collect data, and develop strategies for storm surge information and forecasts.